



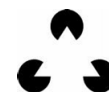
LEGRANDE TECHNICAL AND SOCIAL SERVICES, LLC
COMMENTS ON
PETITIONS FOR WAIVER TO DEPLOY 700 MHZ PUBLIC SAFETY (PS) WIRELESS
BROADBAND (BB) NETWORKS
PS Docket Number: 06-229
October 16, 2009

LeGrande Technical and Social Services, LLC values the continuing efforts by the Commission to address Public Safety wireless broadband communication needs. LEGTSS has vast experience in acquiring funding for, designing, managing, deploying and operating wide-area PS BB wireless networks leveraging commercial technology. Our experience stems from the District of Columbia's 700MHZ broadband wireless network deployments in 2004 and 2007. These deployments have resulted in significant use and have helped to shape various policy decisions.

Policy: SPECTRUM POLICY FOR THE 21ST CENTURY – THE PRESIDENT'S SPECTRUM POLICY INITIATIVE- A PUBLIC SAFETY SHARING DEMONSTRATION
<http://www.ntia.doc.gov/reports/2007/NTIAWARNReport.htm>

Recent network uses: President Obama's 2009
Inauguration and 2/24 State of the Union Address

USERS	USES
US Park Police (USPP)	Streamed live video from locations at the monument, reflecting pool, Jefferson & Madison, and one "other location" to USPP vehicles throughout DC.
USPP, MPD, Capitol Police, DC Fire and EMS (FEMS), DC Homeland Security/Emergency Management Agency (HS/EMA)	Used RWBN to downlink video from the USPP helicopter to mobile command vehicles, command centers, and anyone using the laptop in the field.
HS/EMA	Command bus used it to access Google earth and overlay DC GIS data layers pertaining to inaugural events.
DC Department of Health	Used RWBN to connect 30 remote health stations throughout DC with access to the DC WAN at broadband speeds.



Just as the District's and NYC's deployments have provided valuable insights to the needs for PS' next generation communications planning, so too will further deployments help with shaping the next best steps for eventual national build outs. Unfortunately there are still opposing views about how best to proceed with a national network. It is our belief that this is because we still have more questions than we have answers. Early deployments will better inform the process moving forward and equip our leaders with tangible and clear understanding of the needs, limitations and uses of broadband wireless communications by PS. Early deployments will also re-start the PS BB marketplace for network equipment and devices. This marketplace and much needed innovation have been severely impacted by the failed auction last year. Further, Verizon, AT&T and other carriers are currently building LTE networks. This is the ideal time to partner with these organizations at the local, regional and state levels and thereby reduce construction and ongoing operational costs.

Some argue that allowing early deployments will impact the value of the spectrum to national commercial bidders in the future. It is our belief that the networks and users will add value and will demonstrate to commercial bidders that the PS community is finally prepared to leveraged next generation communication solutions and has fully embraced and invested in commercial technologies as their path forward.

LEGTSS continues to believe that a flexible network build approach is the best way to build and deploy nationally. Simply put, one size does not fit all. However we also feel that it is important to make careful long term decisions based on clearer, more objective analysis. Early Deployments will provide the use, cost, construction, operations and maintenance data required to make multi-billion dollar investment decisions. In advance of considerations for national build out, we have included more detail on our proposed flexible network build approach later in this submission.

LEGTSS respectfully submits the following comments in support of the Commission's approval of 700MHz Public Safety Broadband network deployment waivers.

- 1) Interoperable BB communications is essential to first responders as it has been 8 years since the events of September 11, 2001 and we unfortunately have not made progress towards implementing wide area, nationally interoperable 700MHz PS BB networks. PS needs to move to the next generation in communications capabilities.
- 2) Granting the waivers clearly meets the FCC waiver standards and is in the public interest (*). The PSST, NPTSC and APCO support early deployments.
- 3) Early deployments should use a commercialized, standard communications air interface. All major PS associations (NPTCS, APCO, NENA, and PSST) recommend LTE as that air interface.
- 4) Early deployments should be granted and the FCC should license PS networks on a State, Regional, or Local level. Each entity should have the option of building a private network(s) or

"Innovation Through Integration and Interoperable Communications"



partner with a commercial vendor to build and operate their network(s). The Waiver applicant should be permitted to provide communication services to the entire Government Enterprise (All official Government users within their jurisdiction). Allowing full Government Enterprise use will increase savings and allow for sustained network operations. Further, Early Deployments must allow and encourage commercial network roaming.

5) The FCC early build out requirements should be modified to allow full network operations by the State, Regional or Local entity. Additionally, all recommendations and requirements for network use must be put through a nationally recognized standards settings process such as the APCO ANSI standards setting program.

6) Early deployments should be allowed to sub license the spectrum from the PSST. E.G. New York and San Francisco

7) The FCC should immediately approve waivers for the State, Regional or Local entities whose application are fully funded. Further, the FCC should conditionally grant approval for 9 months in order for waiver applicants to procure commercial, federal, state, regional, and/or local funding for the network. In several instances uncertainty exists as to when the spectrum will be made available thereby impacting the ability for the waiver applicants to obtain funding. Conditional approval will provide the certainty necessary for investment.

8) Congress should take necessary steps to provide pilot funding for PS 700MHz Wireless BB networks to help States and Local jurisdictions better secure and protect America.

(*)The public interest will be served by allowing the State, Regional or Local entity to engage in early deployments. To obtain a waiver of the Commission's rules, a petitioner must demonstrate either that (1) the underlying purpose of the rule(s) would not be served or would be frustrated by application to the present case, and that a grant of the waiver would be in the public interest, or (2) in view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome, or contrary to the public interest, or the applicant has no reasonable alternative. Under either of these standards, the requested waiver allowing the State, Regional or Local entity to deploy a public safety broadband network in advance of the contemplated Shared Wireless Broadband Network is justified.

Respectfully submitted,

Robert LeGrande, II.
President and CEO
LeGrande Technical and Social Services; LLC



**LeGrande Technical and
Social Services, LLC**

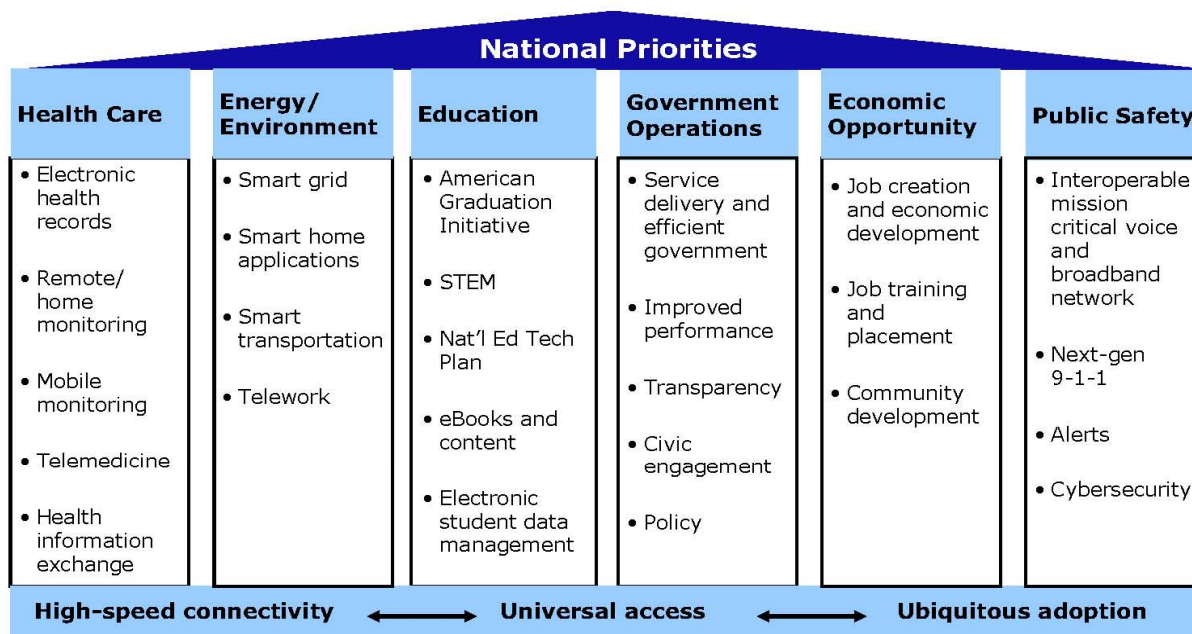
Broadband Wireless Communications for Public Safety: “A Flexible National Network Build Approach”

**Presented by
Robert LeGrande, II.
Former CTO, District of Columbia Government
CEO, LeGrande Technical and Social Services, LLC**



Information from the FCC September 29th Status meeting

Broadband enables innovations necessary for the transformation



BB for PS is a top priority for the Nation and PS





Information from the FCC September 29th Status meeting Continued

Ensuring public safety requires a high quality network

Today:

- Access only to mobile, wireless, commercial broadband
- No specialized mobile, wireless broadband
- Applications developing

GOAL

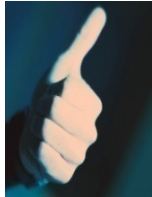
- Interoperable
- Nationwide
- Resilient
- Reliable
- Specialized
- Enhances mission critical voice over time

How do we achieve these goals
when our needs and capabilities
differ from jurisdiction to jurisdiction?



LeGrande Technical and
Social Services, LLC

Partner/Build/Buy Business Model



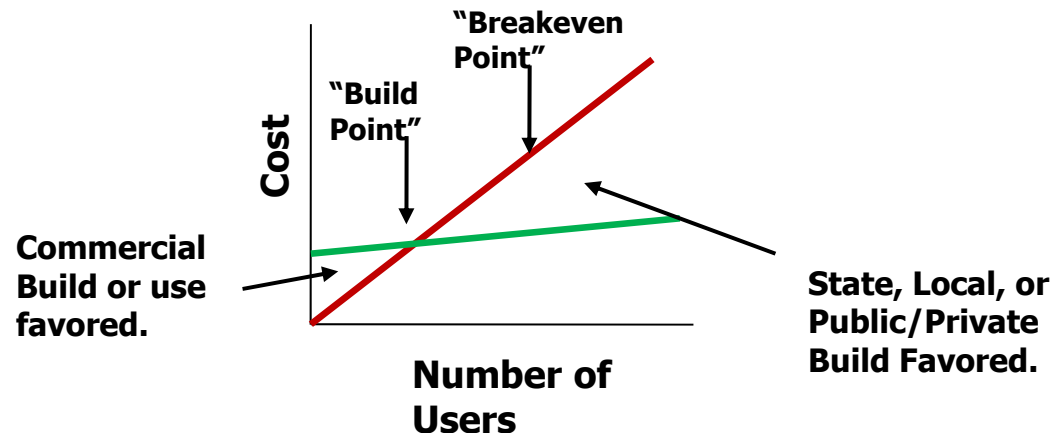
Rule of Thumb:
As The Ratio of
Network
Users to
Coverage Area
Increases...



Financial analysis
moves toward favoring
local build model with
all other factors held
equal.



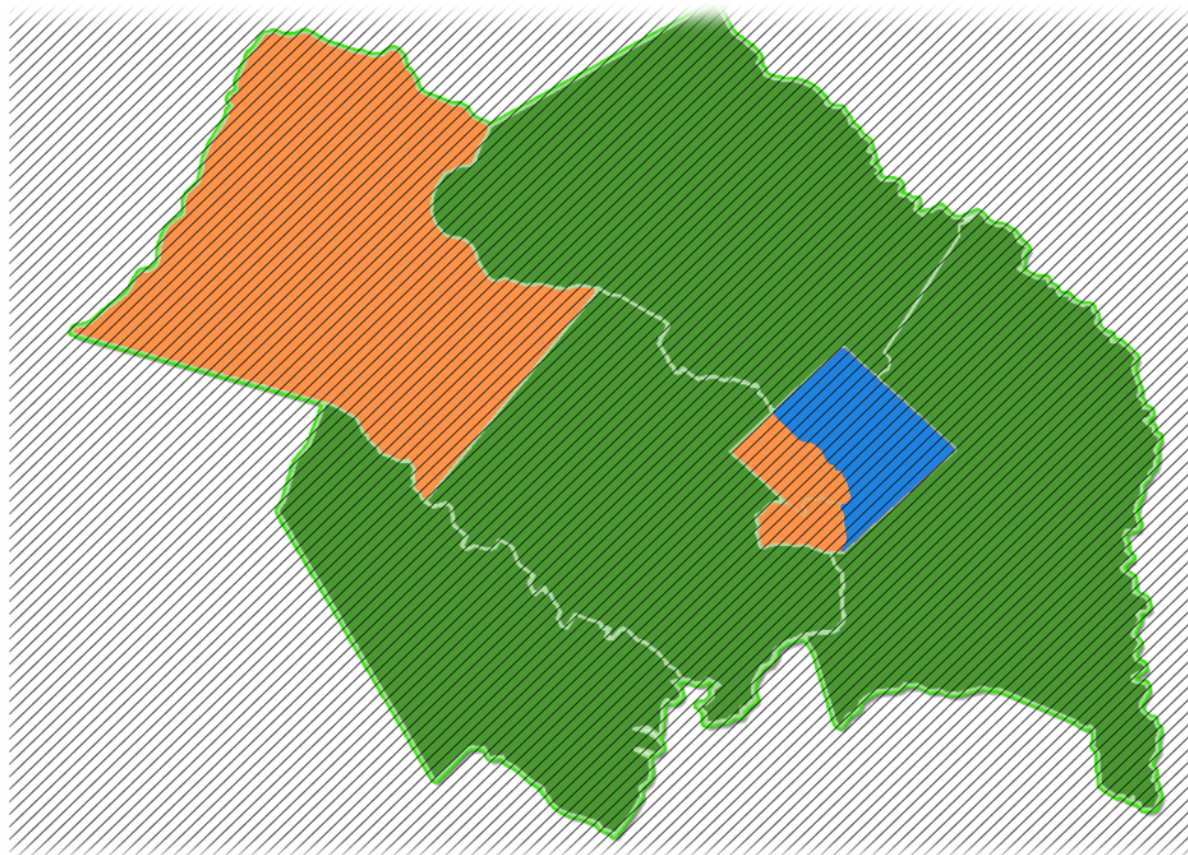
Why? Subscription Costs
of a Commercial Service
Becomes More
Expensive Than
Ownership



- Commercial Subscription Cost
- Network Operating Ownership Cost

One size does not fit all jurisdictions.
We must have a flexible approach that can
be implemented nationally.

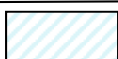
“The Flexible 700MHz Broadband Network Build Approach” Public, Public/Private and Private networks working together



Standards + Common technology (LTE) + shared frequencies (PS and D Block) =

INTEROPERABILITY

Legend



Commercial
Public
Roaming
Partners (AT&T, VZW,
Regional LTE Carriers)



Jurisdictions allow commercial
Carriers to build and operate
their networks on PS & D Block
700 MHz Spectrum



Private County-wide
Networks on PS & D
Block 700MHz Spectrum



Private City-wide Networks
on PS and D Block 700MHz
spectrum



LeGrande Technical and
Social Services, LLC

The Flexible Network Build Approach

- National decision making on general spectrum use with State and/or Regional sub-licensing and coordination
- Local decision making on deployment approach
 - Public safety builds and operates PS and D Block 700MHz Spectrum networks
 - Public safety contracts commercial vendors to 1) build on the PS and D block spectrum on existing local government infrastructure and 2) provide priority service for PS users
 - Public safety contracts commercial vendors to 1) build on the PS and D block spectrum on commercial infrastructure and 2) provide priority service to PS users
 - Local Public safety agencies partner with the States and/or federal agencies to build on the PS and D block spectrum leveraging federal ,state, and local infrastructures.
- All must build to national public safety standards – defined by PS Oversight organization. The NPSTC 700MHz PS Broadband Task Force report is a great start to the standardization process.



The Flexible National Network Build Approach

“Questions and Answers”

- Question: Does PS need the 700MHz D Block Spectrum?
 - **Answer:** Yes. The D Block Spectrum is uniquely positioned next to the PS broadband spectrum and creates a large contiguous block of spectrum which allows for more flexible technological network configurations. This also mirrors the national carrier network spectrum block sizes and should therefore allow PS to better maintain commercial off-the shelf network changes in the future. Lastly, the trend for all broadband communication uses continues to grow exponentially. More and more users combined with more and more advanced uses, all requiring increased bandwidth dictates that we allocate for the future.
- Question: Why can't PS use the 700MHz Narrowband spectrum?
 - **Answer:** Simply put, voice over IP is not ready yet. Where necessary, we need to continue to promote 700MHz narrowband LMR deployments. Later, after the voice, video, and data (VVD) convergence, and mature, reliable PS grade VVD devices are developed; we will be able to transition all communications from LMR to broadband networks.
- Question: Once the VVD convergence happens, should PS return unused portions of spectrum to the FCC for reallocation? If so, when do you think this will occur?
 - **Answer:** Yes, 5-10 years



LeGrande Technical and
Social Services, LLC

The Flexible National Network Build Approach

“Questions and Answers” Continued

- Question: How do we pay for it?
 - **Answer:** As noted in the Subcommittee on Communications, Technology, and the Internet hearing titled, “A National Interoperable Broadband Network for Public Safety: Recent Developments”, there is a financial shortfall in all existing proposals. The Committee Chair stated that a general fund investment will be required for any option we choose.
 - The funding approach we use must leverage all available funding sources (Federal, State, Local, and Commercial).
 - Using the Partner/Build/Buy business model on page 3 will promote sustainable decision making for all jurisdictions large and small. If there are not enough local or regional users to justify a local or regional build, then a commercial partnership should be leveraged. Because this differs per jurisdiction, we must have a flexible approach.
 - We must invest in the direction we are going. The ARRA, and all future PS broadband interoperable communications grants must comply with the established PS recommendations set forth by the national PS associations. Otherwise we will be investing in **non-interoperable** PS BB network solutions.
 - The Flexible Network approach gives the jurisdictions (Customers) a choice and allows them to leverage local, state, federal and/or commercial infrastructure and funding to build PS networks.
 - Note, there will be unused blocks of 700 MHz PS and D Block spectrum that some state and local governments will not utilize for their communications needs. The PSST should be leveraged to either work with the federal government to finance build outs or to competitively partner with commercial carriers to build in unused areas.

These answers contradict traditional commercial spectrum allocation and network build methodologies. However, we are **not** designing commercial networks. In the past we allocated small left over chunks of spectrum for PS use. This has contributed to the interoperability problems we have today. Our first responders deserve better.



LeGrande Technical and
Social Services, LLC

Recommended Next Steps

- Approve all pending 700 MHz BB Spectrum waiver requests so long as the requests are consistent with the established NPTSC recommendations and the flexible network build approach presented earlier
- Provide Federal funding for all pending waiver deployments including device development. These first deployments kick start the 700MHz PS BB marketplace. They will also result in critical analysis information that will better inform our next steps for the entire country.
- Provide NTIA, DHS and all other BB PS communications grant sponsoring organizations with the NPTSC recommendations and the flexible network build approach to ensure that all future PS BB grants (NTIA ARRA Round #2 and #3, etc) only invest standard interoperable BB solutions

We must change our approach in order to change the results!



**LeGrande Technical and
Social Services, LLC**

INNOVATION THROUGH

INTEGRATION AND INTEROPERABLE COMMUNICATIONS

LEGTSS is a small, minority owned business that specializes in advanced data and communications integration solutions for both government and commercial clients. Our unique team has extensive experience in solving some of America's most pressing issues, such as First responder communications interoperability, large scale Homeland Security application implementation and data integration. Members of the LEGTSS team led the District of Columbia's Land Mobile Radio (LMR) network upgrade and as a result the District's First Responders have one of the best interoperable communications systems in the country.

These advancements also led to the development of the nation's first city-wide broadband wireless network for first responders. This pilot network serves as a test bed for how applications can be shared securely among public safety agencies and provides insight to key requirements and operational issues regarding broadband technology. Cited by the Department of Commerce as a Model for the nation, LEGTSS is one of only a few companies in the country with the proven regulatory, governance and technical experience to solve America's public safety LMR and Broadband communications challenges.

The District's Wireless network is a model for the Nation
http://www.ntia.doc.gov/ntiahome/press/2007/WARN_060807.html

STAFFING CAPABILITIES

LEGTSS provides the following types of IT and business staffing services:

**Program and project solutions delivery, Contract Staffing, Temporary to Permanent Staffing
Permanent Placements – Direct Hire**

PORTFOLIO OF SERVICES

We provide a spectrum of IT and Governmental services which fall within the following key service areas:

SERVICES SUMMARY	
Congressional and Regulatory Technical Advisors	Homeland Security Application Development and Integration
Governance and operational process development	Interoperable communications solutions
CUSTOMERS	
District of Columbia Government	SERVICES PROVIDED Wireless Program Executive
Alcatel-Lucent, Inc.	700 MHz Network Public Safety Strategic Planning
Qualcomm, Inc.	700 MHz Network Public Safety Strategic Planning
Maryland Department of Human Services APCO International, Inc.	System Modernization and Strategic Planning Facilitator, Public Safety Communications Visioning Exercise, ARRA Broadband Grant writing
Verizon Wireless, Inc.	700 MHz Network Public Safety Strategic Planning
New York State Government	700 MHz Network Public Safety Strategic Planning, ARRA Broadband Grant writing

LEGTSS, llc

7579 Venture Drive, Alexandria, VA 22315 Phone: (703) 344-1819

Email: rlegrande@legtss.com